

- 11 - the analytical unit transmits at least one of the parameters ($c_1, c_2, c_3 \dots c_m \dots c_M$) to the signal
12 processing unit;
13 - the analytical unit transmits at least one of these parameters ($c_1, c_2, c_3 \dots c_m \dots c_M$), over an
14 existing connecting line (A) between the sensor unit and the analytical unit;
15 - the sensor-signal processing unit adjusts the transmitted parameters ($c_1, c_2, c_3 \dots c_m \dots c_M$).

1 11. The method of claim 10, characterized in that at least one newly transmitted parameter
2 ($c_1, c_2, c_3 \dots c_m \dots c_M$) is transmitted through the connecting line (A), through which the signal
3 (Out) processed in the sensor-signal processing unit is transmitted to the analytical unit.

12. The method of claim 11, characterized in that at least one newly determined parameter
($c_1, c_2, c_3 \dots c_m \dots c_M$) is transmitted through a common power supply line (V) for the sensor system
and the analytical unit.

13. The method of claim 12, characterized in that a necessary change of a parameter ($c_1, c_2,$
 $c_3 \dots c_m \dots c_M$) is transmitted to the sensor-signal processing unit during running operation only if
the transmission of the signals (Out) from the sensor-signal processing unit is not disturbed
thereby.

1 14. The method of claim 13, characterized in that a necessary change of a parameter ($c_1, c_2,$
2 $c_3 \dots c_m \dots c_M$) is transmitted through the common power supply line (V) for the sensor system and
3 the analytical unit.

1 15. The method of claim 14, characterized in that at least one parameter ($c_1, c_2, c_3 \dots c_m \dots c_M$)

2 is transmitted by a change of an output load (I_{load}) between the signal processing unit and the
3 analytical unit.

1 16. The method of claim 15, characterized in that the output load (I_{load}) is varied continuously.

1 17. The method of claim 16, characterized in that the output load (I_{load}) is varied stepwise.

1 18. The method of claim 17, characterized in that at least one parameter ($c_1, c_2, c_3 \dots c_m \dots c_M$)
2 is transmitted by a change of the supply voltage (U_s) for the sensor unit.

1 19. Application of claim 18 to generally programmable systems.

20. Application of the method of claim 10 for acquiring the measurement data of magnetic
field signals.